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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,960	09/10/2003	Alexander M. McQueen	51306/757:1	5858

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EXAMINER	
YAM, STEPHEN K	
ART UNIT	**PAPER NUMBER**
2878	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/659,960	MCQUEEN, ALEXANDER M.	
	Examiner	Art Unit	
	Stephen Yam	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-33* is/are pending in the application.

4a) Of the above claim(s) *10-14,20,32 and 33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-19 and 21-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 November 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to Amendments and remarks filed on November 24, 2004. Claims 10-33 are currently pending.

Election/Restrictions

1. Applicant's further traversal of Group II in the reply filed on November 24, 2004 is acknowledged. The traversal is on the ground(s) that there is a commonality of function between the two groups. This is not found persuasive because the two groups are different both in structure and for operation of the invention, as Group I relies on rotating an image while Group II relies on using multiple image sensor arrays oriented at different angles for capturing an image at different angles.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 15-19, 22-27, and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shellhammer et al. US Patent No. 5,523,552 in view of Butterworth US Patent No. 5,010,241.

Regarding Claim 15, Shellhammer et al. teach (see Fig. 9 and 10) an optical reader comprising a plurality of image sensor arrays (42) disposed in an optical path (see Fig. 10- path from (2) to (40)) for detecting a signal representative of light reflected from the object (see Col. 9, lines 17-22), wherein each of said image sensor arrays is disposed at approximately a same tilt angle a with respect to the optical path (since they are all disposed on the plane of the radial array (40)), wherein each of said image sensor arrays being oriented at a different rotational angle (see Fig. 9) to the optical path in relation to one another. Regarding Claim 22, Shellhammer et al. teach (see Fig. 9 and 10) an optical reader comprising a plurality of image sensor arrays (42) arranged about an optical path (see Fig. 10- path from (2) to (40)), each of said image sensor arrays being disposed at approximately a same tilt angle α with respect to the optical path (since they are all disposed on the plane of the radial array (40)), wherein each of said image sensor arrays is oriented at a different rotational angle (see Fig. 9) to the optical path in relation to one another. Regarding Claim 29, Shellhammer et al. teach (see Fig. 9 and 10) a method of optical reading comprising the steps of arranging a plurality of image sensor arrays (42) about an optical path (see Fig. 10- path from (2) to (40)) with each of said image sensor arrays being disposed at approximately a same tilt angle α with respect to the optical path (since they are all disposed on the plane of the radial array (40)), wherein each of the image sensor arrays being oriented at a different rotational angle (see Fig. 9) to the optical path in relation to one another, and detecting, at each of the image sensor arrays, a signal representative of light reflected from an object (2) (see Col. 9, lines 17-22 and 31-46). Regarding Claim 30, Shellhammer et al. teach (see Fig. 9 and 10) a method of optical reading comprising the steps of projecting an image of an object (2) being read toward a collection system (40) comprised of one

or more sensor arrays (42), each sensor array being arranged at a tilt angle α (see Fig. 9) with respect to an optical path (see Fig. 10- path from (2) to (40)), detecting the image at differing rotational angles (see Fig. 9) relative to the optical path while maintaining the tilt angle α of the sensor array with respect to the optical path (since they are all disposed on the plane of the radial array (40)). Regarding Claims 16 and 23, Shellhammer et al. teach said plurality of image sensor arrays comprising first and second image sensor arrays (see Fig. 9). Regarding Claims 17 and 24, Shellhammer et al. teach said first and second image sensor arrays oriented at a different rotational angle to the optical path, spaced by about 90 degrees to one another (left array (42) vs. top array (42)). Regarding Claims 18 and 25, Shellhammer et al. teach said plurality of image sensor arrays comprising first, second and third image sensor arrays (see Fig. 9). Regarding Claims 19 and 26, Shellhammer et al. teach said first, second and third image sensor arrays are oriented at a different rotational angle to the optical path, evenly rotationally spaced about the optical path (set of three arrays (42) separated by 120°- see Col. 9, lines 31-41). Regarding Claim 31, Shellhammer et al. teach the step of detecting the image at differing rotational angles comprising arranging a plurality of image sensor arrays (42) about the optical path, wherein each of said image sensor arrays being oriented at a different rotational angle to the optical path in relation to one another (see Fig. 9). Shellhammer et al. do not teach a lens system for focusing along the optical path an image of the object being read and the image sensor arrays detecting the light through the lens system, the lens system as a single lens element, or the image sensor arrays disposed according to the Scheimpflug principle. Butterworth teaches (see Fig. 1) a similar device and method, with a lens system (133) for focusing along an optical path (from (133) to (131)) an image of an object (117), the lens system comprising a single lens element (133)

disposed in the optical path, wherein an image sensor array (131) detects light from the object through the lens system, with the image sensor array disposed at a tilt angle with respect to the optical path according to the Scheimpflug principle (see Col. 4, lines 22-29 and 51-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the lens system and a image sensor with the Scheimpflug principle arrangement for each image sensor of Shellhammer et al., as taught by Butterworth, in the device and method of Shellhammer et al., to provide improved focusing abilities and depth-of-field to clearly detect a bar-code image.

4. Claims 21 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shellhammer et al. in view of Butterworth, further in view of Stoner et al. US Patent No. 6,225,641.

Shellhammer et al. in view of Butterworth teach the device in Claims 15 and 27, according to the appropriate paragraph above. Shellhammer et al. do not teach an aperture disposed in the optical path. Stoner et al. teach (see Fig. 3) a similar device, with an aperture (51) disposed in an optical path (OA) with a lens system (50) and a photodetector (60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an aperture disposed in the optical path as taught by Stoner et al. in the device of Shellhammer et al. in view of Butterworth, to provide a desired f-stop for the optics system for a desired field of view, as taught by Stoner et al. (see Col. 4, lines 7-12).

Response to Arguments

5. Applicant's arguments with respect to claims 15-19 and 21-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (571)272-2449. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571)272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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THANH X. LUU
PATENT EXAMINER